TransPacific Experiments Group
Visible Human Viewer User Profile-draft
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This document outlines the User Profile for the Visible Human Viewer software (ver. 1.1) to be used within the GIBN experiments.

Objective: The purpose of the User Profile is to define a typical repeatable set of common operations that an anatomist would follow in using the Visible Human Viewer software for performance measurement. This procedure will be followed by the remote Anatomist and incorporated in an application test plan.

Content:
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1. Experiment Overview: The Digital Libraries component of the TransPacific experiments will use a prototype telemedicine application that would be used by a biomedical researcher such as an Anatomist to gather information useful in the design and operation of Interactive Biomedical Image Collaboratories which would use large datasets across broadband international networks. The proposed experiment will attempt to prove a model that enables interactive biomedical image segmentation, labeling, classification, and indexing to take place using large images.

The application can show different sections of a human body, and enables a researcher to make an interactive segmentation in order to identify each anatomical object. Also, it calculates and fills areas in the segment with metaballs, and renders them. This would be followed by the attachment of anatomical terms to the objects working with the National Library of Medicine's Unified Medical Language System and creating a multilingual object database. Visible Human (VH) data would be transferred to and from the researcher in a near real-time interactive manner. See reference two regarding more details on the composition of the VH dataset. Management of a centralized repository of the resulting database will be more easily done. Biomedical image libraries (in number and size) are sure to grow. Due to the size and international importance of the dataset, multi-lingual labeling of the dataset has been proposed. The first such researcher resides in Japan and will work on a lower extremity subset of the VH dataset. Other potential off-site collaborators exist in Europe. In the future, online access to an anatomical segmented human anatomy atlas will be a vital resource for biomedical researchers worldwide.

2. Procedure
Preliminary: Upon starting the application select reload (the right one) and line-on (the right one). See Notes following the procedure for abbreviation definitions.

2.1 Anatomist: Locate a landmark position near the top of the left femoral bone by moving the MWSB and the LWSB to near the top of the bone and locating through several tries the exact landmark desired. This takes several steps.

Approximation: Determine the rough landmark position by editing the file number changes as follows. This will take six tries.
a. Enter LFN: avfLNNN.tiff, wait for display of image.
b. Enter LFN: avfLNNN.tiff, wait for display of image.
c. Enter LFN: avfLNNN.tiff, wait for display of image.
Then,
a. Enter TFN: avfNNNNa.tiff, wait for display of image.
b. Enter TFN: avfNNNNa.tiff, wait for display of image.
c. Enter TFN: avfNNNNa.tiff, wait for display of image.

Success.

2.2 Anatomist: Locate top of left femoral bone by moving the MWSB and the LWSB to near the top of the bone and locating through several tries the top. This takes several steps.

Approximation: Determine the top of left femoral bone position by editing the file number changes as follows. This will take six tries.
a. Enter LFN: avfLNNN.tiff, wait for display of image.
b. Enter LFN: avfLNNN.tiff, wait for display of image.
c. Enter LFN: avfLNNN.tiff, wait for display of image.
Then,
a. Enter TFN: avfNNNNa.tiff, wait for display of image.
b. Enter TFN: avfNNNNa.tiff, wait for display of image.
c. Enter TFN: avfNNNNa.tiff, wait for display of image.
Success.

2.3 Anatomist: Locate a landmark position near the bottom of the left femoral bone by moving the MWSB and the LWSB to near the bottom of the bone and locating through several tries the exact landmark desired. This takes several steps.

Approximation: Determine the rough landmark position by editing the file number changes as follows. This will take six tries.
a. Enter LFN: avfLNNN.tiff, wait for display of image.
b. Enter LFN: avfLNNN.tiff, wait for display of image.
c. Enter LFN: avfLNNN.tiff, wait for display of image.

Then,
a. Enter TFN: avfNNNNa.tiff, wait for display of image.
b. Enter TFN: avfNNNNa.tiff, wait for display of image.
c. Enter TFN: avfNNNNa.tiff, wait for display of image.
Success.

2.4 Anatomist: Locate bottom of the left femoral bone by moving the MWSB and the LWSB to near the bottom of the bone and locating through several tries the bottom. This takes several steps.

Approximation: Determine the top of left femoral bone position by editing the file number changes as follows. This will take six tries.
a. Enter LFN: avfLNNN.tiff, wait for display of image.
b. Enter LFN: avfLNNN.tiff, wait for display of image.
c. Enter LFN: avfLNNN.tiff, wait for display of image.
Then,
a. Enter TFN: avfNNNNa.tiff, wait for display of image.
b. Enter TFN: avfNNNNa.tiff, wait for display of image.
c. Enter TFN: avfNNNNa.tiff, wait for display of image.
Success.

End of Procedure.

Procedure notes:
- Anatomist here refers to what the method an anatomist would use in practice.
- Approximation refers to the experiment's version of what an experienced anatomist would do.
- Modification of the left window slide bar (LWSB) results in changes to the LONG: file name, i.e. avfLNNN.tiff files changes, NNN is a file number.
- Modification of the middle window slide bar (MWSB) results in changes to the Trans: file names, i.e. avfNNNNa.tiff files changes, NNNN is a file number.
- Modification of the right window slide bar (RWSB) results in changes to the Sagit: file names, i.e. avfSNNN.tiff files changes, NNN is a file number.
- TFN=Transverse file name.
- LFN=Longitudinal file name.
- SFN=Sagital file name.

3. References
1. GIBN project: http://www.nren.nasa.gov/eng/freeman/projects/trans-pac/
2. NLM TransPacific Digital Libraries Experiment Description:
   http://archive.nlm.nih.gov/proj/bita/trans-pacific.html